

SHORT COMMUNICATION

***Hibbertia robur* (Dilleniaceae), a new species from Western Australia**

Specimens of a putative new species first collected by C.A. Gardner in 1962 were segregated in 2013 at the Western Australian Herbarium (PERTH) under the phrase name *Hibbertia* sp. Mt Adams (E.D. Kabay 276). Field observations during spring 2014 have confirmed that it is a distinct taxon; accordingly, it is described here as the new species *H. robur* K.R.Thiele.

Hibbertia robur K.R.Thiele, *sp. nov.*

Type: Tomkins Road 2.2 km south of Mount Adams Road, Western Australia, 10 August 2014, K.R. Thiele 5092 (*holo:* PERTH 08594074; *iso:* AD, CANB, K, MEL).

Hibbertia sp. Mt Adams (E.D. Kabay 276), Western Australian Herbarium, in *FloraBase*, <http://florabase.dpaw.wa.gov.au/> [accessed 10 August 2014].

Shrubs 0.3–0.5(–0.7) m high × 0.3–1.2 m diam., with strongly erect, stout stems when young, these later becoming spreading and bearing erect, stout side-branches, multi-stemmed and resprouting from the rootstock after fire; branchlets glabrous except for sparse, short, crisped white hairs obscured in the leaf axils, prominently swollen below each leaf insertion, the swellings decurrent down the stem and separated longitudinally by fine furrows. *Leaves* erect to somewhat spreading, straight, not fascicled, often restricted to the terminal portions of the branchlets and deciduous from older stems, linear, (12–)15–20(–25) mm long, 1.6–2.2(–3) mm wide, the margins strongly recurved and largely obscuring the abaxial surface including the sunken midrib; adaxial surface obscurely and bluntly tuberculate, glabrous; abaxial surface glabrous or glabrescent with sparse, short, stout, curved or hook-tipped hairs mainly along the distal recurved leaf margins and the midrib; apex obtuse, straight, the midrib somewhat thickened and prominent. *Flowers* few, sessile, solitary, each usually terminating a seasonal growth unit, occasionally terminating short-shoots (and apparently sessile) in leaf axils of strong growth; flower-subtending bracts not prominent, the uppermost leaves below the flower gradually reducing to a series of 5–10 narrowly triangular, herbaceous bracts 4–8 mm long which are glabrous except for a few minute, stellate hairs near the apex and a minutely fimbriate margin. *Sepals* 5, thick-textured, stiffly spreading-erect, 8–11 mm long, appearing glabrous at low magnification when fresh but with a moderate to dense indumentum of minute, tubercle-based stellate hairs visible at high magnification and more prominent when dry; midribs not prominent; outer sepals ovate, acute; inner sepals similar in size, shape and indumentum to the outer but slightly broader. *Petals* 5, yellow, broadly obovate, 12–15 mm long, deeply emarginate. *Stamens* 8–11, all on one side of the gynoecium, the filaments fused for *c.* 0.5 mm at their bases, the free portion *c.* 1.5 mm long; anthers rectangular, *c.* 2 mm long, dehiscing by introrse, longitudinal slits. *Staminodes* broad and flattened, 2–3 lateral to the stamens and 5–16 forming a palisade around the carpels opposite the stamens, basally fused as for the stamens. *Carpels* 2; ovaries globular, densely pubescent; styles excentric and curved-erect from the carpel apex, *c.* 2 mm long. *Ovules* 2 per carpel. *Fruiting carpels* and seeds not seen. (Figures 1, 2)

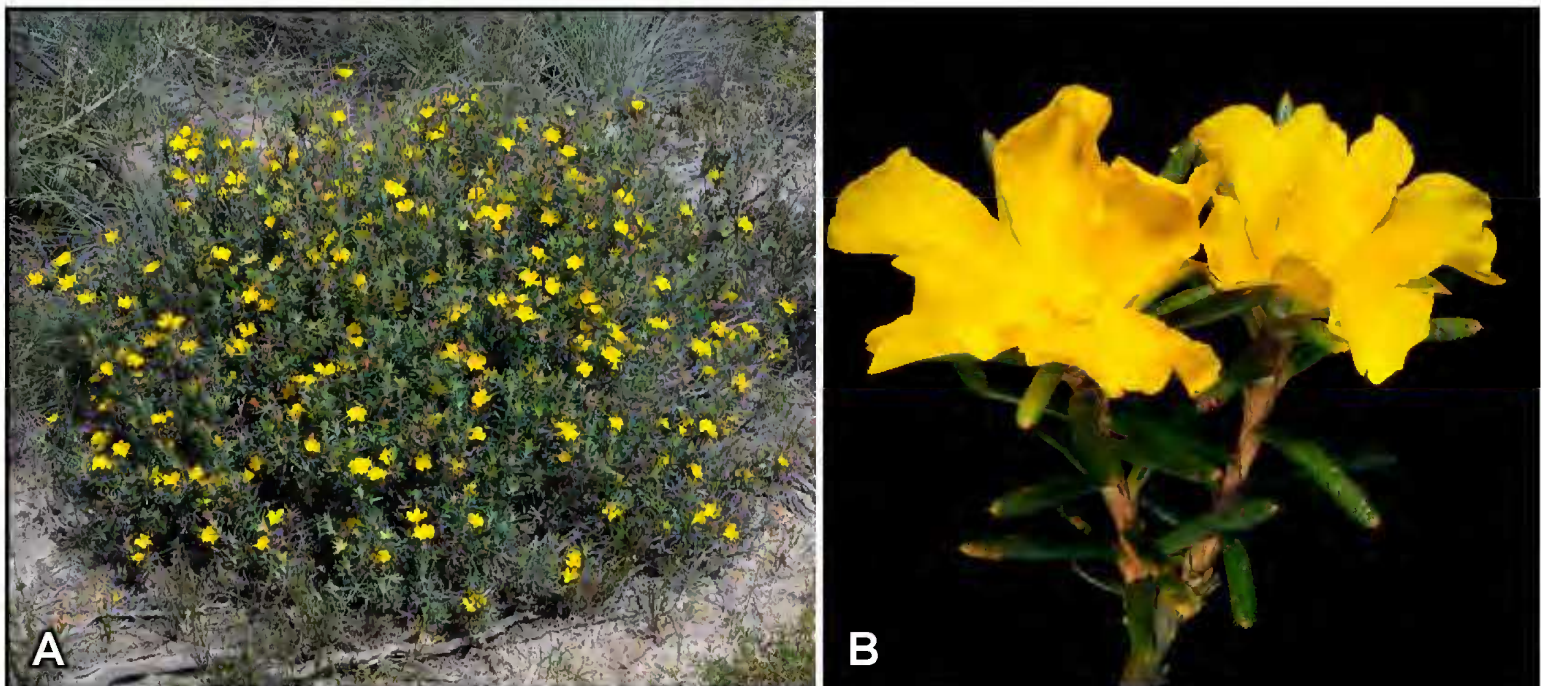


Figure 1. *Hibbertia robur*. A – flowering plant, showing the strongly erect growth and flowers terminating seasonal growth units; B – flowering shoot. Images from K.R. Thiele 5089.

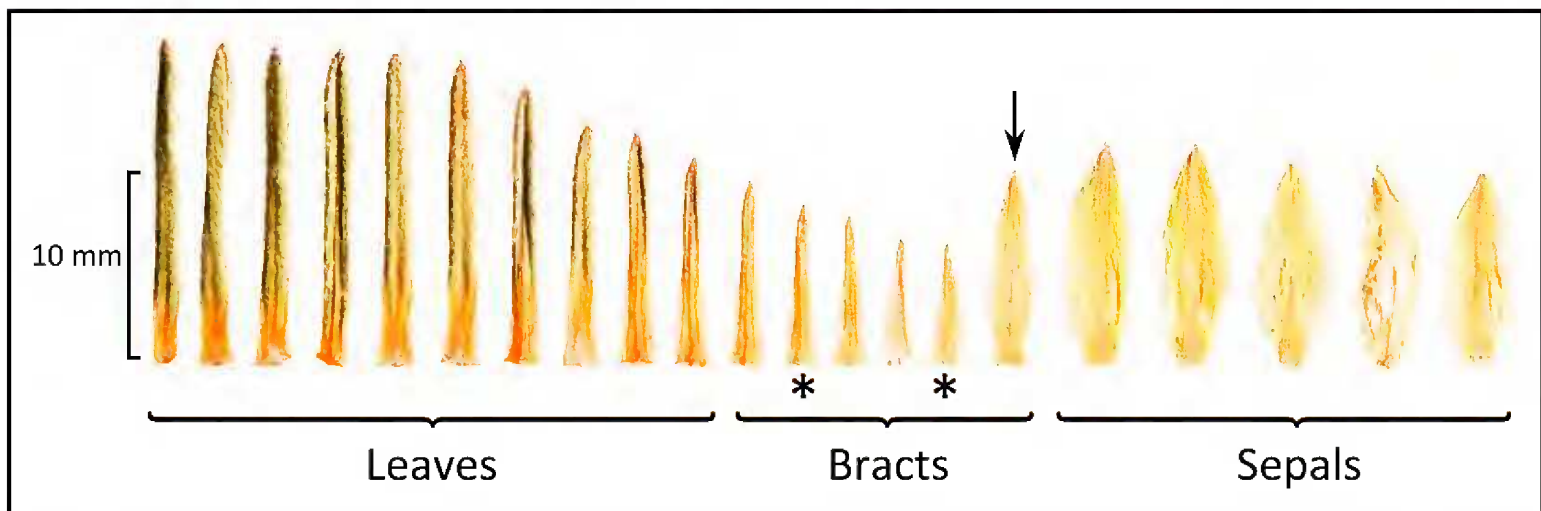


Figure 2. Subtending leaves, bracts and sepals of *Hibbertia robur*, ordered from left to right in their order along the flowering shoot and floral axis. Axillary buds in bracts marked with an asterisk are well-developed at anthesis and will produce monopodial shoots after flowering. The topmost (flower-subtending) bract is marked with an arrow. Images from K.R. Thiele 5092.

Diagnostic features. *Hibbertia robur* may be distinguished from all other Western Australian taxa by its combination of robust growth with glabrous branchlets, linear, obtuse leaves with strongly recurved margins largely obscuring the abaxial surface including the midnerve which is not prominently thickened, sessile flowers terminating growth units, thick-textured sepals which are minutely and usually densely tuberculate-stellate, stamens all on one side of the carpels, and prominent, distinctly flattened staminodes forming a palisade opposite the stamens.

Specimens examined. WESTERN AUSTRALIA: near Cockleshell Gully, E of Mount Lesueur, 22 July 1962, C.A. Gardner 13945 (PERTH); Reserve 29806, 15 km E of Eneabba towards Three Springs, 7 Sep. 1979, E.A. Griffin 2178 (PERTH); c. 18–20 km WNW of Arrino, 22 July 1980, R. Hnatiuk 800015 (PERTH); 2 km N along Sundalara Road from intersection with Robinson Road (37 km due NNE of Eneabba), 10 Sep. 1985, N. Hoyle 126 (PERTH); gravel pits at the end of Mount Adams Road 1.5 km E of intersection with Tomkins Road, 1 August 1994, E.D. Kabay 240 (PERTH); gravel pits at the end of Mount Adams Road about 1.5 km E of intersection with Tomkins Road, 2 Aug. 1994, E.D. Kabay 276 (PERTH); Tomkins Road, 2.2 km S from Mount Adams Road intersection, 28 May 1997, R. Davis 3287 (PERTH); S side of Eneabba-Three Springs Road, 6.4 km W of its junction with Reserve Road, 25 Aug. 2001, J.W. Horn 4009 (PERTH); boundary firebreak between Western Flora caravan park and

Reserve No. C25495, N of Eneabba, 18 July 2004, *M. Hislop* WF3284 (PERTH); W side of Rob Road, 4.6 km N of Swamp Road, E of Port Gregory, 31 July 2013, *M. Hislop* 4262 (PERTH); Isseka Road, East Northampton, 26 June 1999, *I.B. Shepherd* 72 (PERTH); Wotto NR, on Eneabba-Three Springs Road 1.6 km E of First North Road, 10 Aug. 2014, *K.R. Thiele* 5089 (PERTH); Skippers Road 0.9 km E of Second North Road, 10 Aug. 2014, *K.R. Thiele* 5090 (PERTH).

Phenology. Flowering has been recorded in May, July, August and September, with a likely peak in August.

Distribution and habitat. Most specimens to date have been collected from an area bounded approximately by Dongara, Mingenew, Three Springs and Eneabba in the Geraldton Sandplains IBRA bioregion (Department of the Environment 2013) (Figure 3). There are two known populations (represented by *M. Hislop* 4262 and *I.B. Shepherd* 72) north of Geraldton. A single outlying collection labelled as being from Cockleshell Gully (*C.A. Gardner* 13945) may be in error given the lack of recent collections in that area, although apparently suitable habitat is found there and it may have been overlooked. Most collections are from gently sloping upland areas of grey clayey sand over laterite, in low kwongan heath. *M. Hislop* WF3284 is from a flat, lowland yellow sand-plain without laterite in taller vegetation including *Banksia prionotes* and *Eucalyptus todtiana*; this appears to be a marginal habitat for the species, which is more common on adjacent lateritic uplands. *I.B. Shepherd* 72 is from a slope below a granite sheet.

Conservation status. *Hibbertia robur* is relatively common at the sites at which it has been found, and although apparently scattered is relatively widespread. A number of populations occur in nature reserves. It is not considered to be at risk.

Etymology. The epithet is from the Latin *robur* (strength, like an oak), used here as a noun in apposition in reference to the distinctively strong growth habit, branchlets, leaves and sepals of the species.

Notes. *Hibbertia robur* is a distinctive species unlikely to be confused with any other Western Australian taxon. Before it was segregated under its phrase name, a number of PERTH specimens were determined as *H. aurea* Steud. and *H. crassifolia* (Turcz.) Benth. and it is morphologically closest to these species, sharing with them linear leaves with strongly revolute margins, solitary, sessile flowers with acute sepals and stamens all on one side of the two carpels. It can be immediately recognised from both when in flower by the prominent, flattened staminodes forming a palisade opposite the stamens; staminodes in both *H. aurea* and *H. crassifolia* are few in number and are lateral to the stamen cluster. The robust growth and largely glabrous, straight, obtuse leaves are also distinctive. *Hibbertia aurea* has acute, usually narrower leaves to 1 mm wide, while leaves in *H. crassifolia* are usually shorter (4–11 mm, rarely to 20 mm) and are often curved. Both species often have long, simple hairs from the tubercles on young leaves. Their floral bracts are more prominent than in *H. robur* and are ovate rather than narrowly triangular and brown-scarious rather than herbaceous.

The flowers in *H. robur* are almost always borne terminating erect, stout, seasonal growth units and are sessile and subtended by closely-spaced leaves at the branchlet ends. This is an unusual feature in the genus, at least in Western Australia, with most species that have sessile flowers bearing them at the ends of contracted, usually determinate short-shoots axillary to leaves on seasonal growth units. Two or more of the flower-subtending bracts in *H. robur* have axillary vegetative buds which commence growth around the time of anthesis. This gives the plant a distinctive architecture of tiered, monopodial growth units.

Leaves on vegetative shoots have a short, flattened petiole which is broadly inserted on the stem. Leaves terminating flowers form a reduction series from typical leaves to reduced leaves with an extended

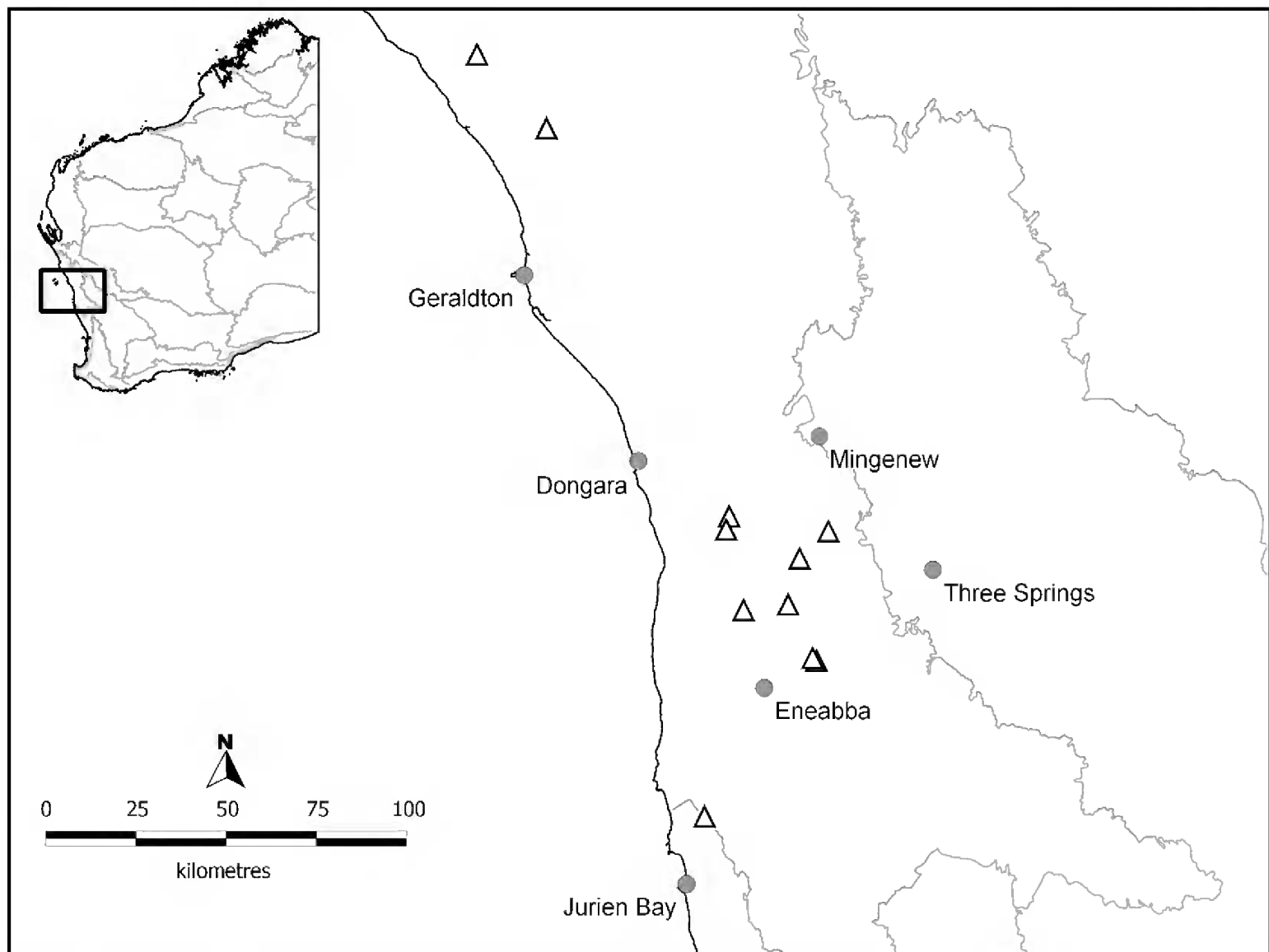


Figure 3. Distribution of *Hibbertia robur*, in the Geraldton Sandplains IBRA bioregion.

flattened petiolar portion and reduced lamina, to flattened, narrowly triangular bracts homologous with the leaf bases and lacking a lamina. As this series progresses towards the flower, the leaves, and then the bracts become progressively shorter (Figure 2). The topmost bract immediately subtending the flower, however, is longer and wider and slightly more ovate in shape. It appears to never bear an axillary bud, and may be a true bract rather than a reduced leaf.

Acknowledgements

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References

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